



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,014	10/31/2003	Maria Ronay	YOR920030204US1 (20140-00)	8234
30678	7590	11/25/2005	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP SUITE 800 1990 M STREET NW WASHINGTON, DC 20036-3425			MORILLO, JANELLE COMBS	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/697,014

Applicant(s)

RONAY, MARIA

Examiner

Janelle Combs-Morillo

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9,10,13-29 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) 13-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9,10 and 31-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9, 10, and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hensel (US 2,196,307) in view of Kono (US 4,775,511) or Tramposch (6,412,628) or Yamamoto (5,023,144).

Hensel teaches a silver alloy for electrical contacts (column 1 lines 1-7) comprising (in weight%): 1wt% Be and Ag, which falls within the alloying ranges of instant claims 9, 32-35. Be meets the instant limitations of not forming a solid solution with silver or an intermediate phase under 700°C and diffuses to the surface at temperature of 400°C or below, substantially as presently claimed.

Hensel does not specify that a layer of Be-Oxide is formed on the surface, wherein said oxide layer is about 1-10 nm thick. However, Kono teaches that it is known to form a 'film' of stable Beryllium oxide on the surface of silver alloys in order to prevent corrosion/tarnishing (column 1 lines 37-42). Alternatively, Tramposch teaches that a beryllium oxide 'film' (column 1 line 67), which forms a preferable stable oxide, can be formed on an otherwise easily corroded silver electrical contact (column 6 line 35) in order to prevent or inhibit the formation of tarnish (column 2 line 21). Alternatively, Yamamoto teaches an oxidized 'film' (BeO) forms easily for Ag alloys containing small amounts of Be (column 2 lines 1-2). The prior art does not mention

Art Unit: 1742

the thickness of said BeO film layer. However, the presently claimed thickness of “about 1 to about 10 nanometers” is held to be within the scope of the term ‘film’ as used by the prior art of record. Because the prior art of record teaches a BeO film forms easily for Ag-Be alloys, or because the prior art teaches motivation to apply a film of BeO to a Ag based alloy, and because applicant has not shown the criticality of the presently claimed film/layer thickness, it is held the combination of Hensel with Kono, Tramposch, or Yamamoto has created a prima facie case of obviousness of the presently claimed invention.

Concerning dependent claim 31, Hensel teaches said alloy also contains 0.002-1% Li (column 1 line 47), however, it is not clear that said element is excluded by the “consisting essentially of” language of said claim. The transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). The applicant has not provided conclusive evidence that the addition of Li would substantially change the basic and novel properties of said alloy.

Concerning claims 9 and 10, though the combination of Hensel and Kono, Tramposch, or Yamamoto does not specify said Ag-Be alloy is located in a recess or a part of a BEOL structure, it is held to be within the scope of the prior art to have formed/used said Ag-Be contact alloy in a variety of electronic structure configurations, including being located in a recess or present in a BEOL structure, because said prior art teaches said alloy is useful for electrical contacts.

***Response to Amendment***

3. In the amendment filed on September 14, 2005 applicant amended claim 9, and added new claims 32-35. The examiner agrees that no new matter has been added.

Applicant's argument that the present invention is allowable over the prior art of record because "consisting essentially of" excludes Li has not been found persuasive. Applicant has not provided conclusive evidence that the addition of Li would substantially change the basic and novel properties of said alloy.

Applicant's argument that the present invention is allowable over the prior art of record because the prior art teaches against the formation of an oxide film has not been found persuasive. The prior art teaches there are advantages as well as disadvantages to forming an oxide film, however Tramposch still teaches that a Be-O film is beneficial to preventing the formation of sulfide films (column 1 lines 63-65). Kono also teaches that oxide films increase tarnish resistances as well (column 1 lines 45-46), even though an accidental scratch will expose the surface.

Applicant's argument that the present invention is allowable over the prior art of record because the prior art does not teach or suggest a silver and alloying element alloy with the instant alloying element oxide layer of about 1-10 nm thick has not been found persuasive. Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima

Art Unit: 1742

facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)), see MPEP 2112. In re Schreiber, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed.Cir.1997). Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product.

As stated above, because the prior art of record teaches a BeO film forms easily for Ag-Be alloys, or because the prior art teaches motivation to apply a film of BeO to a Ag based alloy (and wherein the instant range of about 1-10nm is within the scope of 'film'), and because applicant has not shown the criticality of the presently claimed film/layer thickness, it is held the combination of Hensel with Kono, Tramposch, or Yamamoto, has created a prima facie case of obviousness of the presently claimed invention.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 1742


will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCM  
November 15, 2005

  
GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP 1742